

GTO ALUMINUM MANUFACTURING

ALUMINUM CLADDING

UNIVERSAL 140



SUBMITTAL GUIDE

gtoaluminum.com

GTO ALUMINUM MANUFACTURING

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WELCOME!



GTO ALUMINUM

Interior & Exterior Wall Cladding

GTO Aluminum is the leading innovator in Aluminum Cladding installation systems, profiles, and technology for both Interior & Exterior design.

A pioneer for both residential and commercial structures. Unlike anything else in the construction and design markets today!

UNIVERSAL SYSTEM

Slide-on, tongue and groove installation, fully enclosed with no gaps. Perfect for applications requiring a more waterproof solution.

One portion of the universal profile would be drilled in with screws; as the next profile slides in on top and cover the screws of the one beneath it. This provides a very sleek, sealed, modern, and clean finish.

A SUPERIOR PRODUCT

THAT GIVES CUSTOMER MORE OPTIONS

Using Aluminum is a better solution for an environmentally sustainable future. It does not rust or swell, its impervious to termites, its fire resistant, therefore great to cover the fireplace or BBQ walls for example, it also requires ZERO maintenance and can handle every climate type. Aluminum is 100% recyclable; that means Aluminum is a forever product. It is so long lasting that 75% of all aluminum ever created is still in use today! Remarkable.



Across all industries, innovators are looking to aluminum for greener, more sustainable solutions - and mostly cost efficiency.

- Does not rust or swell.
- Impervious to damage from pests such as termites.
- Fire-resistant. Safe to cover fireplaces
- 100% Recyclable & Enviromentally Sustainable.
- Includes lifetime warranty against water and pests.
- Does not require maintenance.

COLOR GUIDE

STANDARD

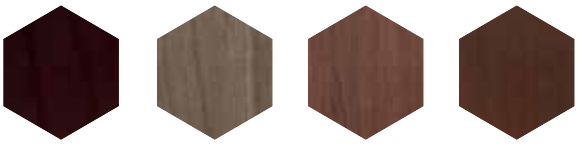
CUSTOM

IN STOCK COLOR OPTIONS



Cedar | Pine | Gray | Walnut | Oak | Espresso | Charcoal

WALNUT COLLECTION



Cocoa | Grey Walnut | Dark Cherry | Toasted Walnut

GREECE COLLECTION

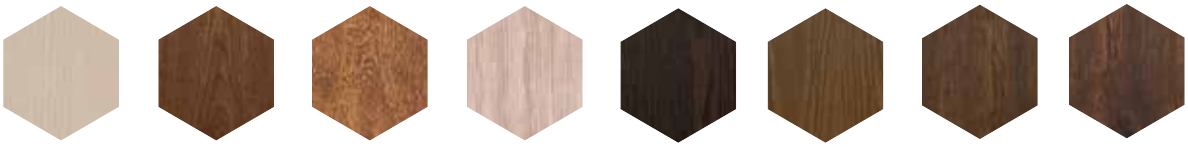


Natural Oak | Antique Oak | Teak

OAK COLLECTION

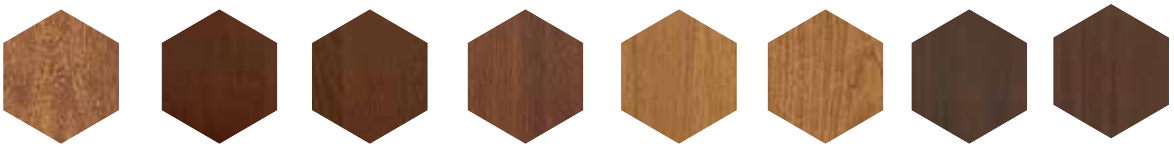


Warm Cedar | Birch | Rustic Chestnut | White Oak | Sandstone Oak | Warm Honeywood | Silver Ash | Urban Ash

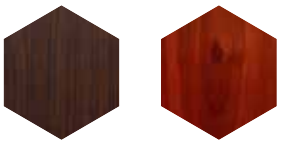


Honey Wood | Bourbon Wood | Driftwood | Driftwood | Hickory Oak | Toasted Chestnut | Heritage Oak | Royal Oak

MORE WOOD COLLECTION



Tuscan Walnut | Cognac Ashwood | Rustic Pecan | Desert Eucalyptus | Sienna Timber | Golden Teak | Hazelnut | Chestnut



Burnt Chestnut | Warm Redwood

METAL & MARBLE COLLECTION



Rust | Marble

BLACK WOOD COLLECTION



Midnight Oak | Black Wood | Onyx Timber

UNIVERSAL 140

PRODUCT OVERVIEW



Description

The Universal 140 is GTO Aluminum's flagship cladding profile, measuring 5.51”W x 0.70”H x 19’L with a 0.047” thickness.

Ideal Applications:

Designed for expansive exterior surfaces, ceilings, and large-scale architectural projects requiring a seamless, modern aesthetic.

Key Features

- Seamless installation with hidden fasteners.
- Available in a range of wood tones and custom colors.
- Engineered for durability in diverse climates.

Standard Color Options


Espresso


Oak


Walnut

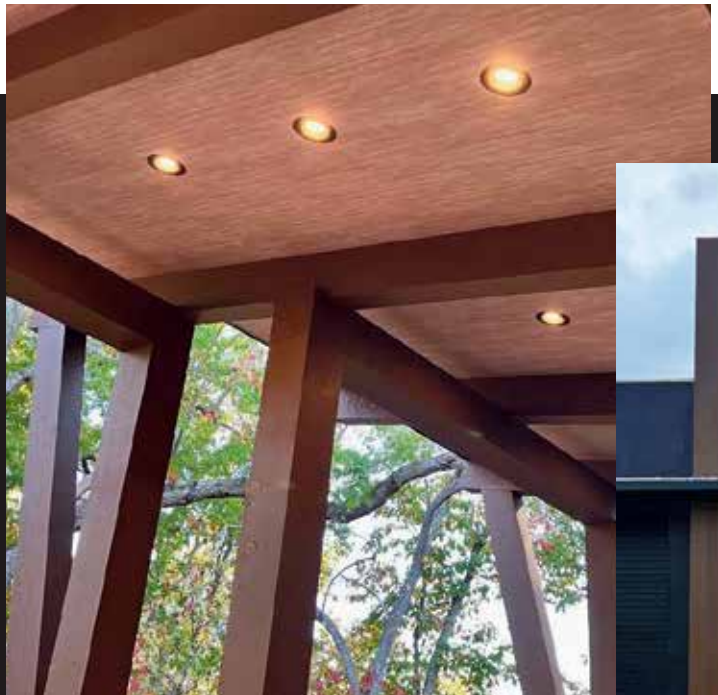

Pine


Cedar


Gray


Charcoal

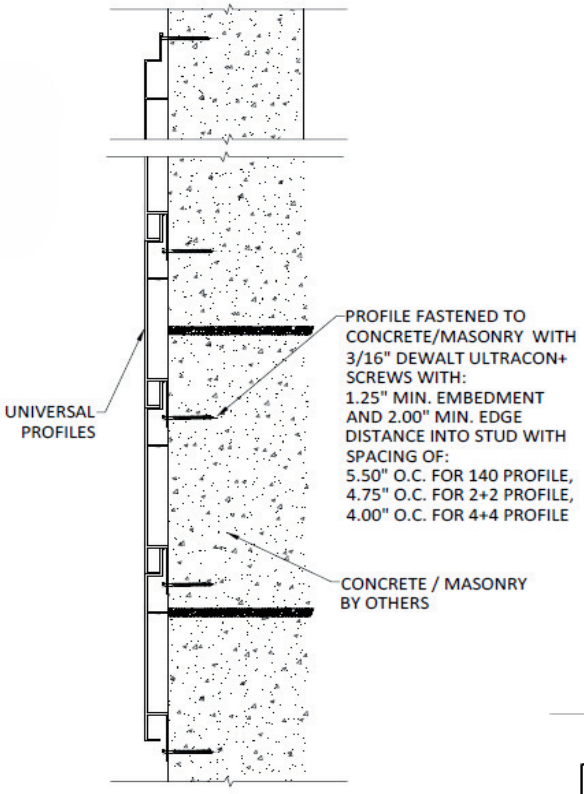

Matte



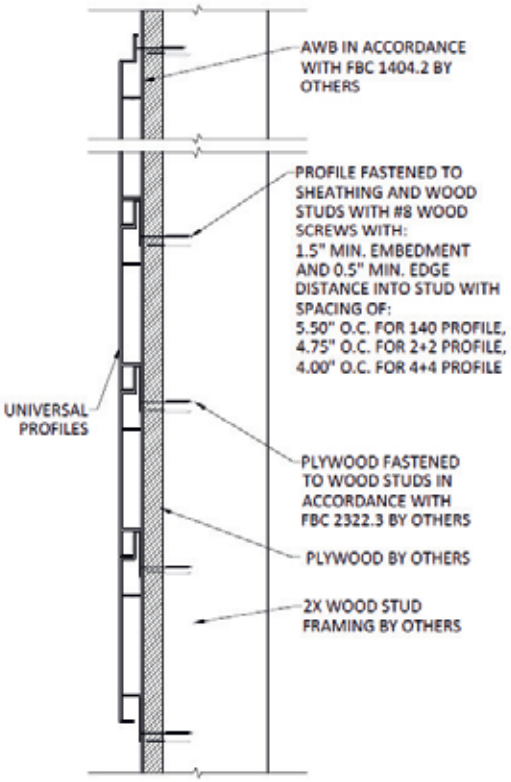




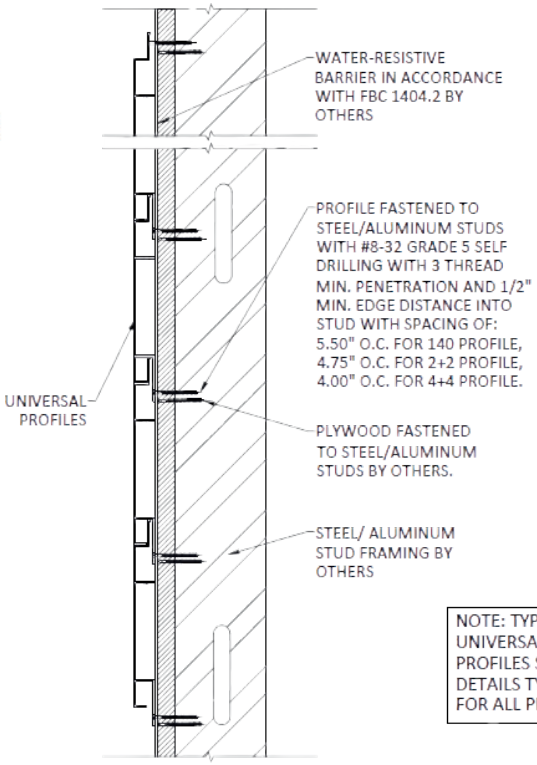
PRODUCT DETAILS &
SPECIFICATIONS



TYPICAL VERTICAL SECTION DETAIL
UNIVERSAL SYSTEM - CONCRETE/MASONRY INSTALLATION

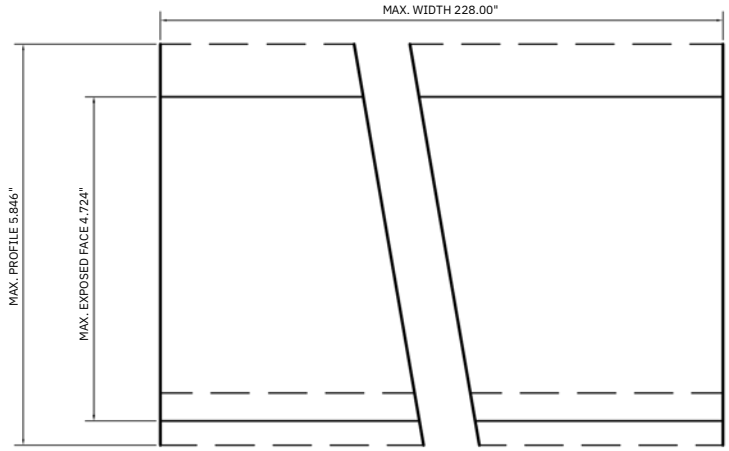


TYPICAL VERTICAL SECTION DETAIL
UNIVERSAL SYSTEM - 2 x WOOD FRAMING INSTALLATION

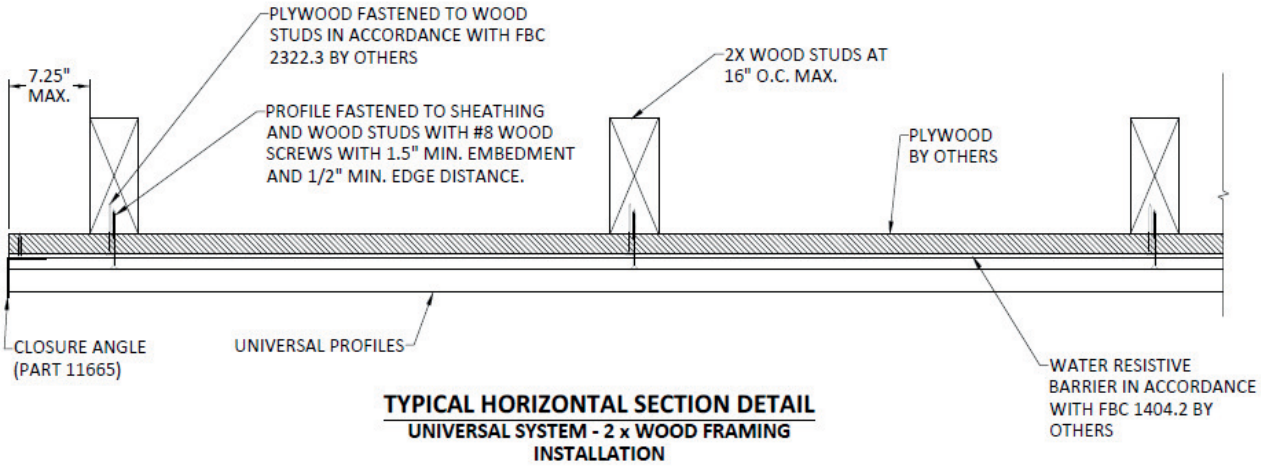


TYPICAL VERTICAL SECTION DETAIL
UNIVERSAL SYSTEM - STEEL/ALUMINUM STUD FRAMING INSTALLATION

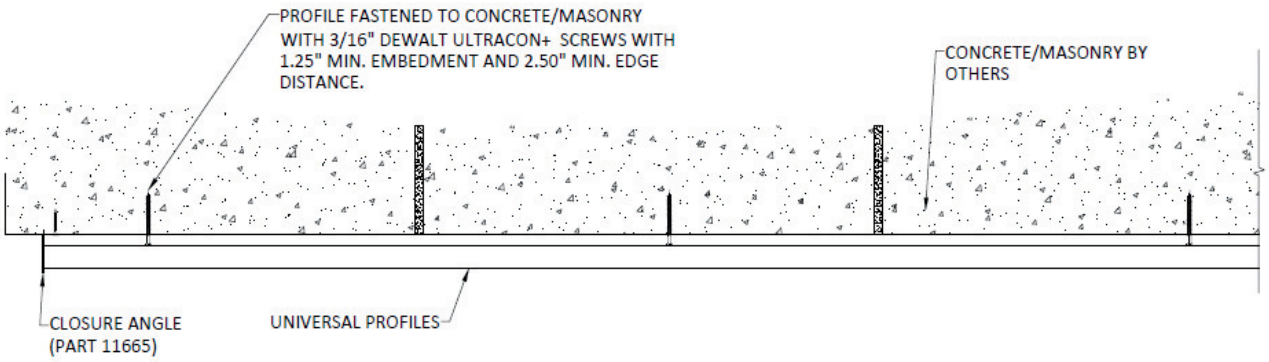
PRODUCT DETAILS &
SPECIFICATIONS





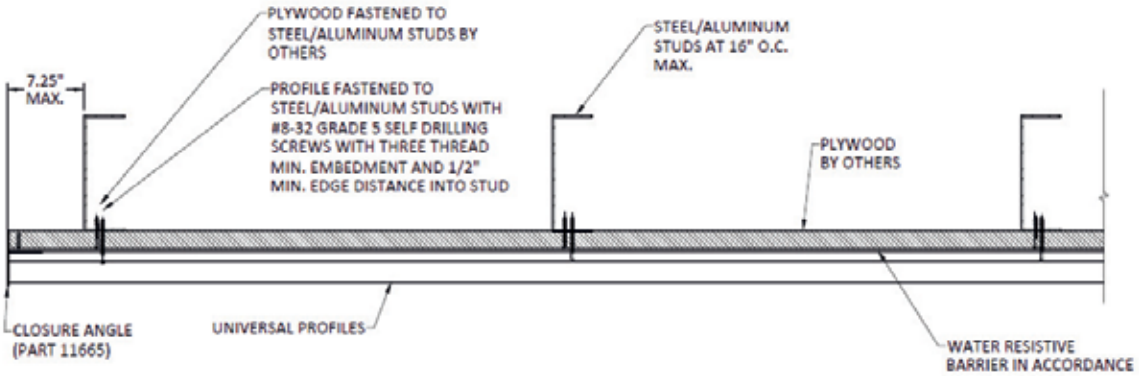


TYPICAL HORIZONTAL SECTION DETAIL
UNIVERSAL SYSTEM - 2 x WOOD FRAMING INSTALLATION

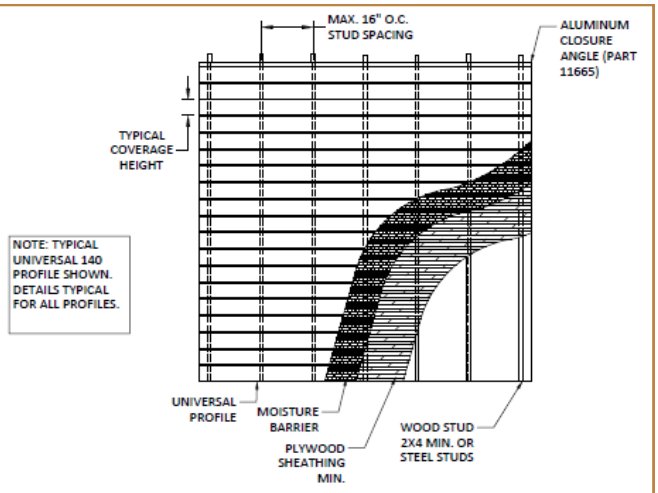


TYPICAL HORIZONTAL SECTION DETAIL
UNIVERSAL SYSTEM - CONCRETE/MASONRY INSTALLATION

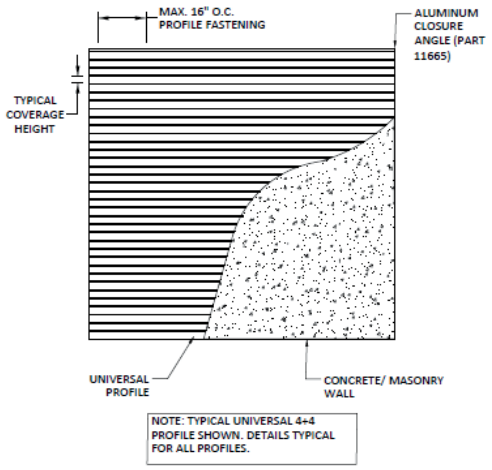
PRODUCT DETAILS &
SPECIFICATIONS



TYPICAL HORIZONTAL SECTION DETAIL
UNIVERSAL SYSTEM - STEEL/ALUMINUM STUD FRAMING INSTALLATION



SIDING INSTALLATION ELEVATION
UNIVERSAL SYSTEM - PLYWOOD SHEATHING OVER 2X4 MIN. WOOD STUD OR STEEL/ALUMINUM STUDS



SIDING INSTALLATION ELEVATION
UNIVERSAL SYSTEM - MASONRY/CONCRETE WALL INSTALLATION

INSTALLATION NOTES

1. ONE INSTALLATION FASTENERS IS REQUIRED AT EACH FASTENER LOCATION SHOWN.
2. INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF ±1/2 INCH THE DEPICTED LOCATION & SPACING IN THE ANCHOR LAYOUT DETAILS (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
3. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
4. ANCHORS SHALL BE AS LISTED AND SPACED AS SHOWN ON DETAILS. EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING.
5. INSTALLATION FASTENERS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
6. INSTALLATION FASTENERS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND FASTENERS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
7. INSTALLATION FASTENERS CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
   - 2X WOOD FRAMING - MINIMUM SPECIFIC GRAVITY OF 0.55.
   - CONCRETE - fc= 3000 PSI
   - MASONRY - CMU PER ASTM C90 MIN. 2000 PSI
   - METAL - 18 GAUGE STEEL, MIN. Fy = 33KSI
   - ALUMINUM - 1/8" MIN. 6063-T5

TECHNICAL DATA &
CERTIFICATIONS

PART 1: GENERAL I.

1.1 RELATED SECTIONS

- **05 40 00** – Cold-Formed Metal Framing: Metal framing used to support aluminum cladding.
- **07 50 00** – Membrane Roofing: Used in conjunction with roof-related aluminum cladding.
- **07 60 00** – Flashing and Sheet Metal: Components used with aluminum siding.
- **07 46 16** – Aluminum Siding: Specifics for aluminum siding applications.
- **05 50 00** – Metal Fabrications: Involves metal workings that are necessary for structural supports and detailed metalwork integral to aluminum cladding installations.

1.2 REFERENCES

- **Miami-Dade County NOA Approval (NOA No. 24-0408.05)**
  - Meets Florida Building Code and High-Velocity Hurricane Zone standards. Large and small missile impact resistant, ensuring durability in extreme weather.

- **Fire Safety Compliance**
  - ASTM E84-24 tested for surface burning characteristics.

- **Class A Fire Rating:**
  - Flame Spread Index (FSI): 0 (Highest fire resistance rating).
  - Smoke Developed Index (SDI): 35 (Universal 4+4) & 30 (Click 180).

- **ISO Standards**:
  - ISO 9001:2015 - Quality Management System.
  - ISO 14001:2015 - Environmental Management System.
  - ISO 45001:2018 - Occupational Health & Safety Management System.
  - ISO 50001:2018 - Energy Management System.



TECHNICAL DATA &
CERTIFICATIONS

PART 1: GENERAL II.

1.2 REFERENCES

- **European Standards / EU Standards:**
  - EN 515, EN 573-3, EN 755-2, EN 755-9, EN 12020-2, EN 15088:2005.
- **Testing and Performance Certifications:**
  - Resistance to humid atmospheres containing Sulphur dioxide (ISO 22479).
  - Acetic acid salt spray resistance (ISO 9227).
  - Accelerated weathering test (Solar box, ISO 16474-2).
  - Natural weathering test (Florida exposure, ISO 2810).
  - Filiform corrosion test (ISO 4623-2).
  - Q-SUN XE-3 HS – Accelerated Weathering Test by SUBLITEX.
  - AAMA 2605 - highest standard for powder-coated aluminum, ensuring durability and color retention in extreme environments.

1.3 SUBMITTALS

- Product data: Submit manufacturer's product literature, specifications, and data sheets.
- Samples: Submit duplicate samples of cladding material, of color and profile specified.
- Shop Drawings: Indicate dimensions, profiles, attachment methods, schedule of wall elevations, trim and closure pieces, soffits, fascia, and related work.
- Certifications: Submit proof of compliance with specified tests and standards.

1.4 WARRANTY

- Provide a 20-year limited warranty from the date of Substantial Completion covering manufacturing defects such as warping, corrosion, cracking, chalk resistance, and color retention. Warranty applies only to the original owner and is not transferable.



TECHNICAL DATA &
CERTIFICATIONS

PART 2: PRODUCTS

2.1 ALUMINUM CLADDING AND COMPONENTS

- **European Standards / EU Standards:**
  - Profile: Universal 140 - 5.51”W x 0.70”H x 19’L | 0.047” thickness
  - Material: 6063 Alloy, T5, powder-coated, 16 gauge.
  - Finish: Powder-coated in standard and custom colors.
  - Colors: Espresso, Oak, Pine, Gray, Charcoal Black, Gloss Black; custom colors available for large orders.

2.2 ACCESSORIES

- **Aluminum Furring Strips** - spaced every 24“-36”
  - **Ventilation**: The air gap created by the furring strips acts as a rainscreen, allowing moisture behind the cladding to dry and dissipating heat to reduce temperature buildup on the panels.
  - **Drainage**: Any excess water entering the system can drain downward through the gap, preventing water accumulation.
  - **Thermal Isolation**: The furring strips minimize direct heat transfer from the wall to the cladding, further limiting expansion.
  - **Flexibility**: The furring strips allow the cladding system to move slightly as a single unit, accommodating minor thermal expansion without causing stress points or buckling. By spacing the furring strips every 24inches, the panels are effectively divided into smaller sections. Each section undergoes less expansion compared to a single long, continuous panel, which helps prevent buckling.
  - **Recommended Tools**: Use a 96 teeth aluminum blade for cuts.

PART 3: EXECUTION

3.1 INSTALLATION

Install according to manufacturer’s instructions and approved shop drawings. Maintain joints true to line, tight-fitting, and with a seamless appearance.

3.2 CLEANING AND MAINTENANCE

Conduct freshwater cleaning and general maintenance quarterly. Use a soft cloth or brush with mild soap and warm water for routine cleaning. Avoid harsh chemical cleaners and maintain a log of all maintenance activities.



ICC-ES TEST REPORT

1.6 Witnessing

No representative of GTO Aluminum USA witnessed the testing reported herein.

1.7 Conditions of Testing

Unless otherwise indicated, all testing reported herein was conducted in a laboratory set to maintain temperature in the range of 65-80°F and humidity in the range of 45-60% RH. All test specimen materials were stored in the laboratory conditioning room of 73.4 ± 5°F and at a relative humidity of 50 ± 5% environment for no less than 24 hours prior to testing. The test specimens were conditioned for **16** days and obtained steady state.

2.0 ReferencedStandards

ASTM E84-24 Standard Test Method for Surface Burning Characteristics of Building Materials.

3.0 Summary of Results

Flame Spread Index – 0

Smoke Developed Index – 35

3.1 General

This fire-test–response standard for the comparative surface burning behavior of building materials is applicable to exposed surfaces such as walls and ceilings. This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire-hazard or fire-risk assessment of the materials, products, or assemblies under actual fire conditions.

3.2 Test Specimens

The samples submitted by the manufacturer was identified as Universal 4+4 Cladding and was supplied in the form of (15) 0.047-in x 4.72-in x 288-in. They were received without damage.

ICC EVALUATION SERVICE®

3.3 Test Setup and Procedure

The product(s) were setup and evaluated in accordance with ASTM E84-24.

Substrate Used:	**N/A**
Mounting Method:	**Standard**
Support Used:	**Rods**
Side Exposed:	**Flat Side**
Adhesive Used & Coverage Rate (if Applicable):	**N/A**
Cement Board Used to Cover Sample (Y/N):	**Yes**
Sample Continuous or Sectioned:	**Sectioned**
No. & Size of Sections:	**(15) 0.047-in x 4.72-in x 288-in**
Lab Ambient Temp (°F):	**71**
Lab Ambient RH (%):	**27**
DateTested:	**1/24/2025**

TECHNICAL DATA &
CERTIFICATIONS

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3.4 Test Results

TEST DATA

Time to Ignition (mm/ss):	01:52
Maximum Flame Spread (ft):	0.000
Time to Max Flame Spread (mm/ss):	00:00
Maximum Temperature (°F):	499
Time to Max Temperature (mm/ss):	09:28
Total Fuel Burned (cubic feet):	45.007
Flame Spread*Time Area (ft*min):	0.000
Smoke Area (%A*min):	22.693
Unrounded FSI:	0.000
Unrounded SDI:	33.573

TEST OBSERVATIONS

01:35	Observed charring and discoloration
07:00	Observed charring on surface increasing

POST-TEST OBSERVATIONS

0 – 8 ft	Section was charred and discolored
8 – 16 ft	Section was slightly discolored
16 – 24 ft	Section was untouched

Analysis on Classification Criteria

Based on Flame Spread Index and Smoke Developed Index when tested in accordance with ASTM E84 or UL 723. Three classes of interior finish are specified by the International Building Code (IBC) that describes a set of classification criteria required for interior wall and ceiling finish materials. The classification criteria for all three model codes is the same: ASTM E84 and UL 723 do not include classification criteria for the results obtained from testing.

Class	Flame Spread Index	Smoke Developed Index
A	0-25	0-450
B	26-75	0-450
C	76-200	0-450

ICC EVALUATION SERVICE®

4.0 Closing Statement This report contains only findings and results arrived at after employing the specific test procedures listed herein. It does not constitute a recommendation for, endorsement of, or certification of the product or material tested. Unless differently required, ICC-ES reports apply the "Simple Acceptance" rule, also called "Shared Risk approach", of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity. ICC-ES makes no warranty, expressed or implied, except that the test has been performed, and a report prepared, based upon the specimen specified by the client. Extrapolation of data, from the test data provided herein, to the batch or lot from which the specimens were obtained may not correlate and should be interpreted with extreme caution. ICC-ES assumes no responsibility for variations in quality, composition, appearance, performance, or other features of similar materials produced by the client, other persons, or under conditions over which ICC-ES has no control. ICC-ES has issued this report for the exclusive use of the client to whom it is addressed. Any use or duplication of this report shall not be made without their consent. This report shall only be reproduced in its entirety.

For ICC-ES, LLC:

Brent Mynar

Tested by: Brent Mynar 01/27/2025
Project Manager

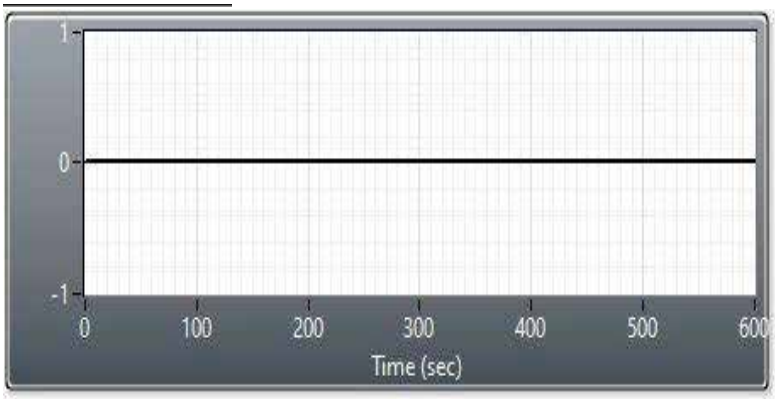
Gabriel Parra

Reviewed by: Gabriel Parra 01/27/2025
Project Engineer

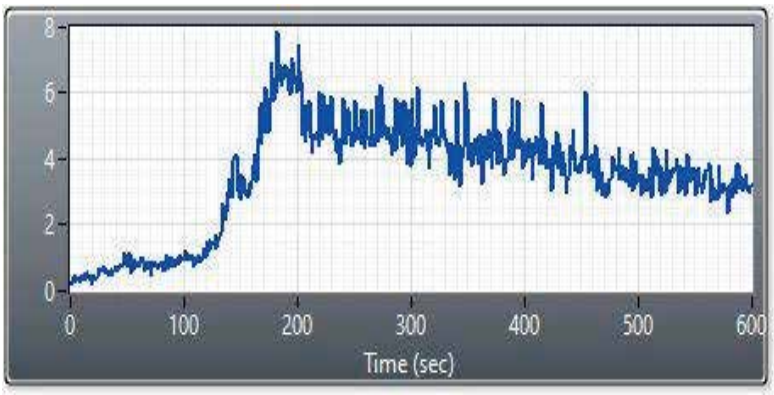
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Appendix A - Data

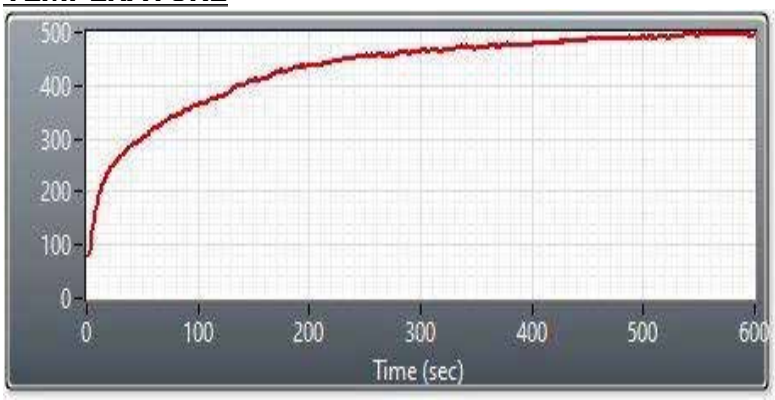
FLAME SPREAD



SMOKE (%A)



TEMPERATURE



TECHNICAL DATA &
CERTIFICATIONS

AMERICAN WOOD COUNCIL

#8 Wood Screw into Mixed Maple-Southern Pine w/ 0.1457 in. of Gap Space.
GTO Aluminum - Universal Aluminum Siding & CLICK Profile Siding System

Calculations herein are performed in accordance with the National Design Specification for Wood Construction - 2018, Chapter 12.3 and Technical Report 12 - General Dowel Equations for Calculating Lateral Connection Values, published by the American Wood Council

Wood Screw Type =	#8	Wood Screw	
Wood Screw Length =	1.75	in	
Wood Screw Embedment =	1.50	in	
Wood Screw Thread Length =	1.17	in	
D =	0.164	in	, Dowel Diameter
D_m =	0.131	in	, Dowel Diameter at max. stress in main member
D_s =	0.131	in	, Dowel Diameter at max. stress in side member
F_b =	90,000	psi	, Dowel bending strength

Wood Screw Withdrawal Calculations

Substrate:	Mixed Maple-Southern Pine		
Tabulated withdrawal design value:	W =	141	lbs
Penetration Factor:	C_p =	1.17	in
Duration Factor:	C_D =	1.60	

Withdrawal Allowable (W') = 263.0 lbs

Tension Design Value

Concrete Anchor Calculations				Masonry Anchor Calculations			
Fastener type:	3/16" DeWalt UltraCon+			Fastener type:	3/16" DeWalt UltraCon+		
Reference:	Manufacture Published Data			Reference:	Manufacture Published Data		
Substrate:	3000 PSI Concrete or Greater			Substrate:	Hollow Block CMU (Per ASTM C-90)		
Minimum embedment:	1.00	in		Minimum embedment:	1.25	in	
Minimum Spacing:	3.00	in		Minimum Spacing:	1.50	in	
Minimum edge distance:	2.50	in		Minimum edge distance:	2.00	in	
Allowable Design Value:	**W'=** 155	lbs /	anchor	**Allowable Design Value:**	**W'=** 150	lbs /	anchor

Minimum anchor capacity: 150 lbs / anchor

TECHNICAL DATA &
CERTIFICATIONS

AMERICAN WOOD COUNCIL

Determine Screwed Connection Tensile Capacity: #8-32 Gr. 5 Self-Drilling Screw

Limit states for screw connection in tension per 2020 Aluminum Design Manual,

J.5.4.2: Pull-Over

Design Tension Strength and Allowable Tension Strength Shall be determined as follows:

Φ = 0.5 (LRFD)

Ω = 3 (ASD buiding-type structure)

Fastener Type: #8-32Gr. 5 Self-Drilling

J.5.5.1: Pull-Out

Thickness of member not in contact with head,	Le =	0.125	in.
Nominal diameter of the screw,	D =	0.164	in.
Threads per inch,	N =	32	per inch
Tensile yield of member not in contact with head,	Fty2 =	21000	psi
Tensile ultimate of member not in contact with head,	Ftu2 =	27000	psi
Thread stripping area of internal thread per thread,	TSA (I) =	0.01	in.
Coefficient for design per 2015 ADM,	Ks =	1.2	(Not applicable for Le > 0.125)
Thread stripping area of internal thread per unit engaged,	Asn =	0.04	in.

Nominal pull out strength,

Use This Value	For 0.060in. ≤ Le ≤ 0.125 in.	Rn =	516.6	lbs
Not Applicable	For 0.125 in. < Le < 0.25 in.	Rn =	516.6	lbs
Not Applicable	For 0.25. ≤ Le < .375 in.	Rn =	78.3	lbs

Design Values,

ΦRn =	**258.3**	**lbs**
Rn/Ω =	**172.2**	**lbs**

J.5.5.2: Pull-Over

a) The nominal strength R_n for the limit state of pull-over for non-countersunk screws is:

$$R_n = C_{pov} t_1 F_{tu1} (D_{ws} - D_h) \qquad \text{(J.5-8)}$$

Coefficient for valley vs crown fastening,	Cpov =	1	
Nominal thickness of part in contact with screw head,	t1 =	0.0472	in.
Tensile ultimate of part in contact with screw head/washer,	Ftu1 =	27000	psi
Larger diam. of screw head or washer,	Dws =	0.438	in.
Nominal diameter of hole in material under screw head,	Dh =	0.1405	in.

Nominal Strength,

Rn =	379.134	lbs

Design Values,

ΦRn =	**189.567**	**lbs**
Rn/Ω =	**126.378**	**lbs**

TECHNICAL DATA &
CERTIFICATIONS

AMERICAN WOOD COUNCIL

E4.4.1 Pull-Out Stength: #8-32 Gr. 5 Self-Drilling Screw - Frame Installation

Reference: AISI Cold Formed Steel Specifications, E4.4.1

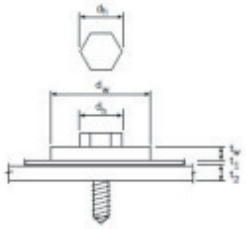
E4.4.1 Pull-Out Strength [Resistance]

The *nominal pull-out strength* [*resistance*], P_{not}, shall be calculated as follows:

$P_{not} = 0.85\, t_c\, d\, F_{u2}$ (*Eq.* E4.4.1-1)

Same formula is referenced in AAMA TIR A9-14 for thickness of 1/4" or less.

Figure 1: Typical Connection Detail



Where,					
Nominal screw diameter,	d =	0.164	in.		
Thickness of member in contact with screw head,	t1 =	0.051	in.		
Thickness of member not in contact with screw head,	t2 =	0.0478	in.		
Tensile strength of mem. not in contact with screw head,	Fu2 =	58000	psi		
Eq. E4.4.1	Pnot =	386.473	lbs		
Per ASD,	**Pns/Ω =**	**128.824**	**lbs, Ω =**	**3**	
Per LRFD,	**ΦPns =**	**193.236**	**lbs, Φ =**	**0.5**	

E4.4.2 Pull-Over Strength

Reference: AISI Cold Formed Steel Specifications, E4.4.2

Pnov = 1.5*t1*d'w*Fu1 (Eq. E4.4.2-1)

Where,					
Thickness of member in contact with screw head,	t1 =	0.0472	in.		
Tensile strngth of mem. in contact with screw head,	Fu1 =	27000	psi		
Effective Pullover Diameter,	d'w =	0.438	in.		
Eq. E4.4.2-1					
Per ASD,	**Pns/Ω =**	**279.094**	**lbs, Ω =**	**3**	
Per LRFD,	**ΦPns =**	**418.64**	**lbs, Φ =**	**0.5**	

Check Tensile Capacity of Screw,

#8-32 Gr. 5 Self-Drilling Screw,	D =	0.164	in.
	Pn/Ω =	**560**	**lbs, per AAMA TIR A9-14**

Design Value	**T=**	**128.824**	**lbs**

TECHNICAL DATA &
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BUILDING DROPS

Product Evaluation Report

Manufacture: Andersen Windows & Doors
Product : GTO Aluminum - Universal Aluminum Siding System & CLICK Profile Siding System

Manufacture Published Data

Ultimate and Allowable Load Capacities for UltraCon+ in Normal-Weight Concrete[1,2,3,4]

Nominal Anchor Diameter d in.	Minimum Embed. Depth h_nom in. (mm)	Minimum Edge Distance in. (mm)	Minimum Spacing in. (mm)	Minimum Concrete Compressive Strength											
				f'c = 2,500 psi (17.3 Mpa)				f'c = 3,000 psi (20.7 Mpa)				f'c = 4,000 psi (27.6 Mpa)			
				Ultimate		Allowable		Ultimate		Allowable		Ultimate		Allowable	
				Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
3/16	1-3/4 (44)	1 (25)	1 (25)	1,080 (4.8)	305 (1.3)	270 (1.2)	75 (0.3)	1,145 (5.0)	325 (1.4)	285 (1.3)	80 (0.4)	1,245 (5.5)	325 (1.4)	310 (1.4)	80 (0.4)
	1-3/4 (44)		1-1/8 (29)	1,190 (5.2)	305 (1.3)	295 (1.3)	75 (0.3)	1,255 (5.5)	325 (1.4)	315 (1.4)	80 (0.4)	1,370 (6.0)	325 (1.4)	340 (1.5)	80 (0.4)
	1-3/4 (44)		2-1/4 (57)	1,365 (6.0)	600 (2.6)	340 (1.5)	150 (0.7)	1,440 (6.3)	635 (2.8)	360 (1.6)	160 (0.7)	1,570 (6.9)	635 (2.8)	395 (1.7)	160 (0.7)
	1 (25)		3 (76)	580 (2.6)	435 (1.9)	145 (0.7)	110 (0.5)	615 (2.7)	460 (2.0)	155 (0.7)	115 (0.5)	670 (2.9)	460 (2.0)	170 (0.7)	115 (0.5)
	1-3/8 (35)			815 (3.6)	455 (2.0)	205 (0.9)	115 (0.5)	860 (3.8)	485 (2.1)	215 (1.0)	120 (0.5)	940 (4.1)	485 (2.1)	235 (1.0)	120 (0.5)
	1-3/4 (44)		3-3/8 (86)	1,365 (6.0)	600 (2.6)	340 (1.5)	150 (0.7)	1,440 (6.3)	635 (2.8)	360 (1.6)	160 (0.7)	1,570 (6.9)	635 (2.8)	395 (1.7)	160 (0.7)
	1-3/4 (44)	2-1/2 (64)	1-1/8 (29)	1,465 (6.4)	1,200 (5.3)	365 (1.6)	300 (1.3)	1,550 (6.8)	1,265 (5.6)	390 (1.7)	315 (1.4)	1,690 (7.4)	1,265 (5.6)	425 (1.9)	315 (1.4)
	1-3/4 (44)		2-1/4 (57)	1,465 (6.4)	1,200 (5.3)	365 (1.6)	300 (1.3)	1,550 (6.8)	1,265 (5.6)	390 (1.7)	315 (1.4)	1,690 (7.4)	1,265 (5.6)	425 (1.9)	315 (1.4)
	1 (25)		3 (76)	580 (2.6)	640 (2.8)	145 (0.7)	160 (0.7)	615 (2.7)	680 (3.0)	155 (0.7)	170 (0.8)	670 (2.9)	680 (3.0)	170 (0.7)	170 (0.8)
	1-3/8 (35)			1,220 (5.4)	735 (3.2)	305 (1.4)	185 (0.8)	1,290 (5.7)	775 (3.4)	325 (1.4)	195 (0.9)	1,405 (6.2)	775 (3.4)	350 (1.6)	195 (0.9)
	1-3/4 (44)		3-3/8 (86)	1,465 (6.4)	1,200 (5.3)	365 (1.6)	300 (1.3)	1,550 (6.8)	1,265 (5.6)	390 (1.7)	315 (1.4)	1,690 (7.4)	1,265 (5.6)	425 (1.9)	315 (1.4)
1/4	1-3/4 (44)	1 (25)	1 (25)	1,265 (5.6)	340 (1.5)	315 (1.4)	85 (0.4)	1,360 (6.0)	370 (1.6)	340 (1.5)	95 (0.4)	1,525 (6.7)	370 (1.6)	380 (1.7)	95 (0.4)
	1-3/4 (44)		1-1/2 (38)	1,265 (5.6)	385 (1.7)	315 (1.4)	95 (0.4)	1,325 (5.8)	415 (1.8)	340 (1.5)	105 (0.5)	1,525 (6.7)	415 (1.8)	380 (1.7)	105 (0.5)
	1-3/4 (44)		3 (76)	1,720 (7.6)	420 (1.8)	430 (1.9)	105 (0.5)	1,850 (8.1)	450 (2.0)	465 (2.0)	115 (0.5)	2,075 (9.1)	450 (2.0)	520 (2.3)	115 (0.5)
	1 (25)		4 (102)	770 (3.4)	495 (2.2)	195 (0.9)	125 (0.6)	830 (3.7)	530 (2.3)	210 (0.9)	135 (0.6)	930 (4.1)	530 (2.3)	235 (1.0)	135 (0.6)
	1-3/8 (35)			1,105 (4.9)	640 (2.8)	275 (1.2)	160 (0.7)	1,190 (5.2)	690 (3.0)	300 (1.3)	175 (0.8)	1,335 (5.9)	690 (3.0)	335 (1.5)	175 (0.8)
	1-3/4 (44)			1,975 (8.7)	645 (2.8)	495 (2.2)	160 (0.7)	2,120 (9.3)	690 (3.0)	530 (2.3)	175 (0.8)	2,380 (10.5)	690 (3.0)	595 (2.6)	175 (0.8)
	1-3/4 (44)	2-1/2 (64)	1-1/2 (38)	2,200 (9.7)	1,590 (7.0)	550 (2.4)	400 (1.8)	2,365 (10.4)	1,710 (7.5)	590 (2.6)	430 (1.9)	2,650 (11.7)	1,710 (7.5)	665 (2.9)	430 (1.9)
	1-3/4 (44)		3 (76)	2,200 (9.7)	1,635 (7.2)	550 (2.4)	410 (1.8)	2,365 (10.4)	1,755 (7.7)	590 (2.6)	440 (1.9)	2,650 (11.7)	1,755 (7.7)	665 (2.9)	440 (1.9)
	1 (25)		4 (102)	805 (3.5)	1,260 (5.6)	200 (0.9)	315 (1.4)	865 (3.8)	1,355 (6.0)	215 (1.0)	340 (1.5)	970 (4.3)	1,355 (6.0)	245 (1.1)	340 (1.5)
	1-3/8 (35)			1,755 (7.7)	1,635 (7.2)	440 (1.9)	410 (1.8)	1,885 (8.3)	1,755 (7.7)	470 (2.1)	440 (1.9)	2,115 (9.3)	1,755 (7.7)	530 (2.3)	440 (1.9)
	1-3/4 (45)			2,290 (10.1)	1,635 (7.2)	570 (2.5)	410 (1.8)	2,460 (10.8)	1,755 (7.7)	615 (2.7)	440 (1.9)	2,650 (11.7)	1755 (7.7)	665 (2.9)	440 (1.9)

1. Tabulated Ultimate load values are for anchors installed in uncracked concrete. Concrete compressive strength must be at the specified minimum at the time of installation.
2. Allowable load capacities listed are calculated using an applied safety factor of 4.0. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety or overhead.
3. Linear interpolation may be used to determine allowable loads for intermediate compressive strengths.
4. For lightweight concrete multiply tabulated allowable load values by a reduction factor of 0.60.

MECHANICAL ANCHO
ULTRACON® + Concrete Screw Anchor

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Product Evaluation Report

Manufacture: Andersen Windows & Doors
Product : GTO Aluminum - Universal Aluminum Siding System & CLICK Profile Siding System

MECHANICAL ANCHORS

ULTRACON® + Concrete Screw Anchor

Ultimate and Allowable Load Capacities for UltraCon+ Anchors Installed in the Face of Hollow Concrete Masonry[1,2,3,4]

Nominal Anchor Diameter d in.	Minimum Embed. Depth h_{nom} in. (mm)	Minimum Edge Distance in. (mm)	Minimum End Distance in. (mm)	Minimum Spacing in. (mm)	Minimum ASTM C90 Block Type	Ultimate Load		Allowable Load	
						Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
3/16	1-1/4 (32)"	1 (25)	2 (51)	1-1/2 (38)	Normal Weight	725 (3.2)	405 (1.8)	145 (0.6)	80 (0.4)
	1-1/4 (32)			3 (76)	Normal Weight	750 (3.3)	585 (2.6)	150 (0.7)	115 (0.5)
	1 (25)	2 (51)	2 (51)	1-1/2 (38)	Lightweight	300 (1.3)	460 (2.1)	55 (0.3)	90 (0.4)
	1 (25)			3 (76)	Lightweight	340 (1.5)	460 (2.1)	65 (0.3)	90 (0.4)
	1-1/4 (32)			1-1/2 (38)	Normal Weight	740 (3.3)	700 (3.1)	150 (0.7)	140 (0.6)
	1-1/4 (32)	2-1/2 (64)	2-1/2 (64)	1-1/8 (29)	Normal Weight	775 (3.4)	935 (4.1)	155 (0.7)	185 (0.8)
	1-1/4 (32)			2-1/4 (57)	Normal Weight	775 (3.4)	935 (4.1)	155 (0.7)	185 (0.8)
	1 (25)	3 (76)	3 (76)	1-1/2 (38)	Lightweight	385 (1.8)	670 (3.0)	80 (0.4)	135 (0.6)
	1 (25)	3 (76)	3 (76)	3 (76)	Lightweight	440 (2.0)	670 (3.0)	90 (0.4)	135 (0.6)
1/4	1-1/4 (32)	1 (25)	2 (51)	1-1/2 (38)	Normal Weight	775 (3.4)	475 (2.1)	155 (0.7)	95 (0.4)
	1-1/4 (32)			3 (76)	Normal Weight	775 (3.4)	800 (3.5)	155 (0.7)	160 (0.7)
	1 (25)	2 (51)	2 (51)	2 (50)	Lightweight	435 (1.9)	530 (2.4)	90 (0.4)	105 (0.5)
	1 (25)			4 (102)	Lightweight	495 (2.2)	530 (2.4)	100 (0.4)	105 (0.5)
	1-1/4 (32)			2 (51)	Normal Weight	760 (3.4)	740 (3.3)	150 (0.6)	150 (0.7)
	1-1/4 (32)	2-1/2 (64)	2-1/2 (64)	1-1/2 (38)	Normal Weight	800 (3.5)	1,200 (5.3)	160 (0.7)	240 (1.1)
	1-1/4 (32)			3 (76)	Normal Weight	880 (3.9)	1,450 (6.4)	175 (0.8)	290 (1.3)
	1 (25)	3 (76)	3 (76)	2 (51)	Lightweight	510 (2.3)	820 (3.6)	100 (0.4)	165 (0.7)
	1 (25)			4 (102)	Lightweight	580 (2.6)	820 (3.6)	115 (0.5)	165 (0.7)

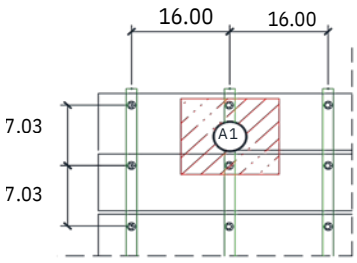
1. Tabulated load values are for anchors installed in minimum 8-inch-wide, Type II, light weight or normal weight concrete masonry units conforming to ASTM C90 that have reached the minimum designated ultimate compressive strength at the time of installation ($f'm \geq 2{,}000$ psi). Mortar must be Grade N,S or M..
2. Allowable load capacities listed are calculated using an applied safety factor of 5.0. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety or overhead.
3. Allowable shear loads into the face shell of a masonry wall may be applied in any direction.
4. The tabulated values are applicable for anchors installed into the ends of concrete masonry units (e.g. wall opening) where minimum edge distances are maintained

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Product Evaluation Report

Anchor Capacity Calculations: X - Universal 140 Profile



Size: 0.78 ft2

Design pressure:	70.0 psf

Zone	Area (ft2)
A1	0.78

Minimum Anchor Capacity per Substrate:			
Anchor Type	Tension Load Capacity		
#8 Wood Screw	26	lbs /	anchor
#8-32 Self-Drilling Screw	3	lbs /	anchor
3/16" ITW Tapcon	12	lbs /	anchor

Anchor Capacity Calculations: X - Universal 140 Profile

Design pressure:	70.0 psf

Zone	Area (ft2)	Tesnion Load (lbs)	Min. Anchor Capacities		
			Shear Cap. (lbs)	Tension Cap. (lbs)	Spacing (in)
A1	0.78		N/A		5.5

Installation:
Wood: Install #8 Wood Screw Anchors with 5.5" O.C. spacing on each stud.
Steel/ADM : Install #8-32 Self-Drilling Screw anchors with 5.5" O.C. spacing on each stud.
Concrete : Install 3/16" DeWalt Ultracon anchors at 3.00" Min. from the corners with 5.5" O.C. spacing.